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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/825,853

04/16/2004

Chiranjit Acharya

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8791

7590

09/13/2006

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EXAMINER

FREJD, RUSSELL WARREN

ART UNIT

PAPER NUMBER

2128

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/825,853

Applicant(s)

ACHARYA, CHIRANJIT

Examiner

Russell Frejd

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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Examination of Application #10/825,853

1. Claims 1-28 of application 10/825,853, filed on 16-April-2004, are presented for examination.

Claim Rejections under 35 U.S.C. § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

- 2.1 Claims 1-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

- 2.2 MPEP Section 2106(IV)(B)(2)(b)(ii) provides that a statutory computer process is determined not by how the computer performs the process, but by what the computer does to achieve a practical application with a useful, concrete and tangible result. For example, a computer process that simply calculates a mathematical algorithm that models noise is nonstatutory, while a claimed process for digitally filtering noise employing the mathematical algorithm is statutory. The long line of cases in this area that are referred to in MPEP Section 2106(IV)(B)(2)(b)(ii) exemplify this requirement, by utilizing in the claim language, terms such as controlling, executing, changing and removing. In view of the aforementioned requirement and the interim guidelines for 101 subject matter eligibility, the Examiner respectfully contends that the claim language of independent claims 1, 8, 15 and 22, do not claim a practical application or provide a useful, concrete and tangible result, that language claiming: (In regard to claim 1)

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producing (emphasis added) a set of finite mixture models (FMM)s from a set of parameter values and training data using an Expectation Maximization (EM) process;

calculating a minimum description length (MDL) value for each of the set of FMMs; and

selecting a FMM based on the corresponding MDL values.

2.3 For at least these reasons, the Examiner respectfully posits that the claims of the present invention do not meet the criteria for a statutory process. Accordingly, the claims are determined to be a method for selecting a FMM based on corresponding MDL values, consisting solely of mathematical operations, converting one set of numbers into another set of numbers, whereby the method does not manipulate appropriate subject matter, and thus cannot constitute a statutory process (MPEP Section 2106(IV)(B)(2)(c)).

2.4 The Examiner also posits that the method of the present invention is computer executable software code, or a program per se, consisting of a machine-readable medium having software instructions that implement the method for selecting a FMM based on corresponding MDL values. For at least this reason, the software instructions of the present invention do not meet the criteria for a statutory process.

2.5 In view of the aforementioned requirement, the Examiner respectfully contends that the claim language of claims 8-14 do not claim a practical application, that language claiming a machine-readable medium having software for selecting a FMM based on corresponding MDL values. The medium holding instructions is determined to recite data embodied on a computer-readable medium. However, the data does not impart functionality to either the data as claimed or to the computer. As such, the claimed invention recites non-functional descriptive material,

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i.e., mere data. Non-functional descriptive material is merely carried on the medium, it is not structurally and functionally interrelated to the medium, and thereby does not manipulate, or execute, appropriate subject matter, and thus cannot constitute a statutory process (MPEP Section 2106(IV)(B)(2)(c)).

2.6 Furthermore, claims 1-28 are determined to not meet the criteria for a statutory process due to the description on page 14 of the specification, wherein the machine-readable medium is described as encompassing a carrier wave that encodes a data signal. In view of the interim guidelines for 101 subject matter, the machine-readable medium carrier wave of claims 1-28, having software for selecting a FMM based on corresponding MDL values, does not manipulate appropriate subject matter, and thus cannot constitute a statutory process under 35 U.S.C. § 101.

Claim Rejections under 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.1 Claims 1-4, 6-11, 13-18, 20-25, 27 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by the article authored by Wang et al., hereinafter Wang, entitled *Data Mapping by Probabilistic Modular Networks and Information-Theoretic Criteria*.

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3.2 Wang discloses, in regard to claims 1, 8, 15 and 22: producing a set of finite mixture models (FMM)s [p. 3378, col. 2] from a set of parameter values and training data [p. 3379, col. 2, sec. A] using an Expectation Maximization (EM) process [p. 3379, col. 1]; calculating a minimum description length (MDL) value for each of the set of FMMs; and selecting a FMM based on the corresponding MDL values [p. 3381, col. 1].

Claims 2, 9, 16 and 23: each parameter value is a model-complexity parameter for the EM process [p. 3379, col. 1].

Claims 3, 10, 17 and 24: selecting the FMM from the set of FMMs corresponding to the MDL having a smallest MDL value [p. 3381, col. 1].

Claims 4, 11, 18 and 25: applying the FMM from the set of FMMs to vector quantize a stream of data [p. 3379, col. 2, sec. A].

Claims 6, 13, 20 and 27: applying the FMM from the set of FMMs to cluster a stream of data [p. 3379, col. 2, sec. A].

Claims 7, 14, 21 and 28: the FMM from the set of FMMs defines a cluster pattern [p. 3379, col. 2, sec. A].

Claim Objections

4. Claims 5, 12, 19 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Response Guidelines

5. A shortened statutory period for response to this action is set to expire **3 (three) months and 0 (zero) days** from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02, 710.02(b)).

5.1 Any response to the Examiner in regard to this non-final action should be

directed to: Russell Frejd, telephone number (571) 272-3779, Monday-Friday from 0530 to 1400 ET, **or** the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279. Inquires of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist (571) 272-2100.

mailed to: Commissioner of Patents and Trademarks
P.O. Box 1450, Alexandria, VA 22313-1450

or faxed to: (571) 273-8300

Hand-delivered responses should be brought to the Customer Service Window, Randolph Building, 401 Dulany Street, Alexandria, VA, 22314.

Date: 31-August-2006



**RUSSELL FREJD
PRIMARY EXAMINER**